IIAR 9-2020 Addendum A-202x

Standard for Minimum System Safety Requirements for Existing Closed-Circuit Ammonia Refrigeration Systems

IIAR 9

Public Review #2 Draft

This draft only shows Substantive and Informative Changes (and enough content for understanding) resulting from Public Review #1 Comments received.

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Chapter 1. General

1.1 Purpose

1.1.1 This standard provides the minimum safety requirements for existing closed-circuit ammonia refrigeration systems.

1.2 Scope

1.2.1 Existing stationary closed-circuit vapor compression refrigeration systems using ammonia as a refrigerant in industrial occupancies shall comply with this standard, ~~except as provided in Section 1.2.1.1 and Section 1.2.1.2~~.

~~1.2.1.1 This standard shall not apply to non-industrial occupancies.~~

~~1.2.1.2 This standard shall not apply to ammonia absorption systems.~~

1.3 Procedure

1.3.1 An initial safety evaluation shall be conducted for each ammonia refrigeration system to ensure that it complies with the minimum system safety requirements specified in IIAR 9 no later than January 1st, 2026.

1.3.2 The safety evaluations shall be revalidated at least every five (5) years.

~~1.3.3 Chapter 8 of this standard describes the methodology which shall be used to conduct the safety evaluations.~~

Chapter 7: Minimum System Safety Requirements Applicable to All Systems

~~7.2.10 **Emergency Shutdown Documentation.** In accordance with Section 1.4.1, this section permits a reduction or modification of the requirements of codes and standards that applied to initial design and installation. It shall be the duty of the person in charge of the premises at which the refrigeration system is installed to provide directions for the emergency shutdown of the system at a location that is readily accessible to trained refrigeration system staff and trained emergency responders. Documentation shall include the following:~~

~~7.2.10.1 Instructions with details and steps for shutting down the system in an emergency.~~

~~7.2.10.2 The name and telephone numbers of the refrigeration operating and maintenance staff.~~

~~7.2.10.3 The names and telephone numbers of all local, state, and federal agencies to be contacted as required in the event of a reportable incident.~~

~~7.2.10.4 *Maximum Intended Inventory of ammonia in the system.~~

~~7.2.10.5 Signage shall include emergency facility contact title and phone number to call in the event of an alarm or ammonia release.~~

Note Only: This section is required in other facility documents and was removed.

7.3.3.3 ~~**Ready**~~ **Access to Valves**

1) Manually operated system emergency valves identified as being part of the system emergency shutdown procedure that are inaccessible from floor level shall be operable from a fixed permanent work surface, or by use of a chain or a remote-actuated manual operator that shall be ready access from the floor or a permanent work surface. Ready access and clearance to operate the valves while wearing emergency response personal protective equipment shall be provided.

7.3.13.2 **Exhaust Ventilation.** ~~In accordance with Section 1.4.1, this section permits a reduction or modification of the requirements of codes and standards that applied to initial design and installation.~~ Machinery rooms shall be vented to the outdoors by means of a mechanical exhaust ventilation system at a rate that complies with the codes and standards adopted at the time of installation or at the time that there was an addition or modification that would affect the emergency ventilation rate.

Chapter 8: Minimum System Safety Evaluation Methodology

8.3.1 The initial minimum system safety evaluation shall be conducted within five years ~~from the date of publication of this standard~~ in accordance with Section 1.3.1.

Appendix A. (Informative) Explanatory Material

A.7.2.10.4 ~~The maximum intended inventory is an estimate of the maximum amount of ammonia refrigerant (in pounds) held in the covered process at any one time during the calendar year. Some owners use the maximum operating inventory as their maximum intended inventory.~~

A.7.3.12.2 While the minimum safety requirement in this standard to activate the emergency ventilation is 1000 ppm, it is important to note that NFPA 70, the National Electric Code (NEC), requires that the emergency ventilation be activated no higher than 150 ppm in order to maintain an unclassified hazardous location designation. AHJs may choose to enforce this provision over the requirement of IIAR 9.